IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

DYSON TECHNOLOGY LIMITED and DYSON, INC. Plaintiffs, v. MAYTAG CORPORATION, Defendant.	)	No. C.A. 05-434-GMS

APPENDIX TO PLAINTIFFS' REPLY BRIEF IN SUPPORT OF THEIR MOTION FOR A PRELIMINARY INJUNCTION

C. Barr Flinn (No. 4092)
bflinn@ycst.com
John W. Shaw (No. 3362)
jshaw@ycst.com
YOUNG CONAWAY STARGATT & TAYLOR, LLP
The Brandywine Building
1000 West Street, 17th Floor
Wilmington, Delaware 19801
(302) 571-6600

Attorneys for Plaintiffs

OF COUNSEL

David B. Tulchin
Richard C. Pepperman, II
James T. Williams
Keith McKenna
SULLIVAN & CROMWELL LLP
125 Broad Street
New York, New York 10004
(212) 558-4000

September 20, 2005

TABLE OF CONTENTS

SUMMARY OF DISPUTED ELEMENTS

Summary of Disputed Elements

The '515 Patent

Claim No. 14 of the '515 Patent	Element No.	Maytag's Position	Dyson's Response
14. A cleaning apparatus comprising:			
(a) an outer container comprising a bottom and a sidewall extending to and meeting the bottom, the sidewall having an interior surface,	14.1	Unchallenged	
a dirty air inlet at an upper portion of the outer container spaced from the bottom	14.2	"Upper portion" means very "top" of the container and dirty air inlet is 41% from the "top." (Maytag Br. at 8)	"Upper portion" means above the midline of the container, not at the very top of the container; in any event, the dirty air inlet is only about 30.7% from the "top" of the container. (Dyson Reply Br. at 6)
and is oriented for supplying dirt laden air into the container tangentially to the interior surface of the outer container	14.3	Claim element is not met because dirty air inlet does not "cause" tangential airflow. (Maytag Br. at 8)	Dirty air inlet need only be "oriented" for supplying tangential air flow; it need not "cause" the tangential airflow. (Dyson Reply Br. at 6 -7)
which has a circular cross-section	14.4	Unchallenged	
and an air outlet from the container at an upper portion of the container;	14.5	Unchallenged	
(b) a circular cross-sectioned cyclone with a longitudinal axis mounted inside the container, the cyclone comprising	14.6	Unchallenged	
a cyclone air inlet at an upper end having a first diameter of the cyclone in air communication with the air outlet of the container,	14.7	Unchallenged	

C1

Claim No. 14 of the '515 Patent	Element No.	Maytag's Position	Dyson's Response
an interior dirt rotational surface of frusto-conical shape defining the cyclone for receiving an air flow from the air inlet and for maintaining its velocity to a cone opening smaller in diameter than the diameter of the upper end of the cyclone,	14.8	"[T]he cyclone of the Fusion vacuum cleaner does not maintain the velocity of the air, but accelerates it." (Maytag Br. at 8-9)	The words "maintaining its velocity" do not mean that the air flow must remain at a constant speed, just that it continue to flow through inner cyclone. Maytag's interpretation is inconsistent with recognized principles of cyclonic technology and would not even cover the preferred embodiment of the patent. (Dyson Reply Br. at 7)
the air inlet being oriented for supplying air tangentially to the surface,	14.9	Unchallenged	
an outer surface of frusto-conical shape,	14.10	Unchallenged	
and a cyclone air outlet communicating with the interior of the cyclone adjacent the upper end of the cyclone;	14.11	Unchallenged	
(c) a dirt receiving and collecting chamber extending from the bottom of the container to a portion of the outer surface of the cyclone,	14.12	Unchallenged	
wherein the chamber and cyclone are separable from the outer container	14.13	Unchallenged	
wherein the receiving chamber has a circular cross-sectioned inner surface around the axis with a minimum diameter furthest from the opening of 3 times the diameter of the cone opening	14.14	The diameter of the receiving chamber furthest from the cone opening is the diameter of the plastic portion of the receiving chamber, not the rubber-like material on that chamber. The plastic portion has a diameter that is 2.9 times the diameter of the cone opening. (Maytag Br. at 9)	The diameter of the dirt collection chamber furthest from the cone opening is located on the rubber-like portion of the chamber that touches the bottom container, and that diameter is about 3.11 times the diameter of the cone opening. The rubber-like material is glued tight to the dirt collection chamber and forms one component. (Dyson Reply Br. at 8) Even if the ring seal is excluded, the diameter of the plastic portion of the

Claim No. 14 of the '515 Patent	Element No.	Maytag's Position	Dyson's Response
			receiving chamber is 2.97 times the diameter of the cone opening, which, when rounded to the nearest tenth, is still 3 times the diameter of the cone opening. (Dyson Reply Br. at 7-8)
and wherein the chamber is open to the bottom of the container to facilitate emptying of the dirt;	14.15	Unchallenged	
(d) ring seal means between the chamber and outer container; and	14.16	Unchallenged	
(e) means for generating an air flow	14.17	Unchallenged	
which passes sequentially through the dirty air inlet, the container, the cyclone air inlet, the cyclone, the receiving chamber and the cyclone air outlet,	14.18	Unchallenged	
the air flow rotating around the frusto-conical interior surface of the cyclone and the inner surface of the receiving chamber and depositing dirt in the receiving chamber.	14.19	Unchallenged	

C3

The '748 Patent

Claim No. 15 of the '748 Patent	Element No.	Maytag's Position	Dyson's Response
15. In a cleaning apparatus including			
an outer container comprising a bottom and a sidewall extending to and meeting the bottom, the sidewall having an interior surface,	15.1	Unchallenged	
a dirty air inlet at an upper portion of the outer container spaced from the bottom	15.2	*Same as Element 14.2.*	*Same as Element 14.2.*
which is oriented for supplying dirt laden air into the container tangentially to the interior surface of the outer container	15.3	*Same as Element 14.3.*	*Same as Element 14.3.*
which has a circular cross-section	15.4	Unchallenged	
and an air outlet from the container at the upper portion of the container;	15.5	Unchallenged	
a circular cross-sectioned cyclone having a longitudinal axis and mounted inside the container, the cyclone comprising	15.6	Unchallenged	
a cyclone air inlet at an upper end having a first diameter of the cyclone in air communication with the air outlet of the container,	15.7	Unchallenged	
an interior dirt rotational surface of frusto-conical shape for receiving an air flow from the air inlet and for maintaining its velocity to a cone opening smaller in diameter than the diameter of the upper end of the cyclone,	15.8	*Same as Element 14.8.*	*Same as Element 14.8.*
the air inlet being oriented for supplying air tangentially to the surface,	15.9	Unchallenged	

C4

Claim No. 15 of the '748 Patent	Element No.	Maytag's Position	Dyson's Response
an outer surface of frusto-conical shape,	15.10	Unchallenged	
and a cyclone air outlet communicating with the interior of the cyclone adjacent the upper end of the cyclone;	15.11	Unchallenged	
a dirt receiving and collecting chamber extending from the cone opening;	15.12	Unchallenged	
and means for generating an air flow	15.13	Unchallenged	
which passes sequentially through the dirty air inlet, the container, the cyclone air inlet, the cyclone, the receiving chamber and the cyclone air outlet,	15.14	Unchallenged	
the air flow rotating around the frusto-conical interior surface of the cyclone and depositing the dirt in the receiving chamber	15.15	Unchallenged	
the improvement which comprises: a disc means provided on the outside of the cyclone intermediate the receiving chamber and the air outlet of the container and around to the longitudinal axis of the cyclone	15.16	"[T]he disc of the Fusion vacuum cleaner is not provided on the outside of the cyclone, but secured about an upper portion of the receiving chamber." The disc is not intermediate the receiving chamber and the air outlet. Intermediate means "in the middle." Here, the disc is below the boundary of the receiving chamber itself. (Maytag Br. at 10)	The disc is "on" the outside of the cyclone. The inside diameter of the disc surrounds and touches the outer surface of the inner cyclone and is attached to it by the same screws that secure the disc to the shroud. The disc is also intermediate the receiving chamber and the air outlet of the container (here, the shroud). The term "intermediate" here means "between" not in the middle. In any event, the disc here is not only between the air outlet (or shroud) and the receiving chamber, but also in the middle of those two components. (Dyson Br. at 9-10)

Claim No. 15 of the '748 Patent	Element No.	Maytag's Position	Dyson's Response
with a space between the interior surface of the container and the disc means for passage of air	15.17	Unchallenged	
wherein the disc means retards long strands in the dirt from clogging the air outlet and retains the strands in the container.	15.18	Unchallenged	

Claim No. 16 of the '748 Patent		Maytag's Position	Dyson's Response
16. The apparatus of claim 15 wherein the disc means is circular around the longitudinal axis of the cyclone.		No infringement by virtue of its dependence on claim no. 15.	The Fusion has the elements of this claim. Because claim no. 15 is infringed, this claim is infringed.

Claim No. 17 of the '748 Patent		Maytag's Position	Dyson's Response
17. The apparatus of claim 16 wherein the disc means is conical in shape around the longitudinal axis with a smaller opening attached to the outer surface of the cyclone and a larger opening below the smaller opening facing the bottom of the container such that there is a tapered wall between the openings.		No infringement by virtue of its dependence on claim nos. 16.	The Fusion has the elements of this claim. Because claim no. 16 is infringed, this claim is infringed.

The '008 Patent

Claim No. 1 of the '008 Patent	Element No.	Maytag's Position	Dyson's Response
1. In a cleaning apparatus including			
an outer container comprising a bottom and a sidewall extending to and meeting the bottom, the sidewall having an interior surface,	1.1	Unchallenged	
a dirty air inlet which is oriented for supplying dirt laden air into the container tangentially to the interior surface of the outer container	1.2	*Same as Element 14.3.*	*Same as Element 14.3.*
which has a circular cross-section	1.3	Unchallenged	
and an air outlet from the container;	1.4	Unchallenged	
a circular cross-sectioned cyclone having a longitudinal axis mounted inside the container, the cyclone comprising	1.5	Unchallenged	
a cyclone air inlet at an upper end having a first diameter of the cyclone in air communication with the air outlet of the container,	1.6	Unchallenged	
an interior dirt rotational surface of frusto-conical shape for receiving an air flow from the air inlet and for maintaining its velocity to a cone opening smaller in diameter than the diameter of the upper end of the cyclone,	1.7	*Same as Element 14.8.*	*Same as Element 14.8.*
the air inlet being oriented for supplying air tangentially to the surface,	1.8	Unchallenged	
an outer surface of frusto-conical shape,	1.9	Unchallenged	

C7

Claim No. 1 of the '008 Patent	Element No.	Maytag's Position	Dyson's Response
and a cyclone air outlet communicating with the interior of the cyclone adjacent the upper end of the cyclone;	1.10	Unchallenged	
a dirt receiving and collecting chamber extending from the cone opening;	1.11	Unchallenged	
and means for generating an air flow	1.12	Unchallenged	
which passes sequentially through the dirty air inlet, the container, the cyclone air inlet, the cyclone, the receiving chamber and the cyclone air outlet,	1.13	Unchallenged	
the air flow rotating around the frusto-conical interior surface of the cyclone and depositing the dirt in the receiving chamber	1.14	Unchallenged	
the improvement which comprises:			
(a) a shroud means mounted on and around the outer surface of the cyclone and having opposed ends along the longitudinal axis and providing for outlet air from the container into the air inlet to the cyclone	1.15	Unchallenged	
wherein the shroud means is mounted at one end below the air inlet to the cyclone and extends along the outer surface with the other end at a position intermediate to the cone opening and the air inlet to the cyclone,	1.16	"[T]he air inlets to the cyclone . . . are actually below the upper end of the shroud by at least 3/16 inch." (Maytag Br. at 11)	Maytag improperly includes as part of the shroud, the portion of the plastic component that is situated above the shroud and surrounds the air inlet to the inner cyclone. The shroud is only the perforated portion of the plastic component that surrounds the outside surface of the inner cyclone, which is below the air inlet to the inner cyclone. (Dyson Reply Br. at 10-11)

Claim No. 1 of the '008 Patent	Element No.	Maytag's Position	Dyson's Response
wherein the shroud means contacts the outer surface of the cyclone for closure at the other of the ends	1.17	Unchallenged	
and wherein the shroud means has perforations adjacent to the position intermediate to the cone opening for the flow of air from the outer container to the cyclone inlet; and	1.18	The Fusion's perforations "are not adjacent to the position at the end of the shroud nearest to cone opening, but such perforations are spaced about an inch away from such location." (Maytag Br. at 11-12)	Although the patent specification at one point refers to perforations being "immediately adjacent" the bottom of the shroud, the claim element is broader—requiring only that the perforations be "adjacent" that position. Furthermore, the perforations on the shroud are less than one-half inch from this location and are thus "adjacent" to it. (Dyson Reply Br. at 11)
(b) disc means provided on the shroud means at a lower longitudinal extent of the shroud means and the air inlet of the cyclone and around the axis of the cyclone	1.19	The words "provided on" require that the disc and shroud be one integral component. They are two components on the Fusion. Because of this, the disc "does not provide the lower longitudinal extent of the shroud . . . but extends well below the lower longitudinal extent of the shroud and even further beyond the perforations that comprise the air inlet of the cyclone." (Maytag Br. at 12)	Maytag improperly attempts to read words into the claim element. Nothing in the patent requires that the disc and shroud be one component. The patent specification shows that the words "provided on" simply require that the disc be attached to the bottom of the shroud, which it is on the accused product. The claim element is met if the air inlet is above the shroud and the disc is at a lower longitudinal extent of the shroud, which is the case on the Fusion. (Dyson Reply Br. at 11-12)
with a space between the interior surface of the container and the disc means for passage of air,	1.20	Unchallenged	

Claim No. 1 of the '008 Patent	Element No.	Maytag's Position	Dyson's Response
wherein the disc means aids in dirt removal in the first container by preventing some of the dirt from flowing into the air inlet to the cyclone.	1.21	Unchallenged	

Claim No. 2 of the '008 Patent		Maytag's Position	Dyson's Response
2. The apparatus of claim 1 wherein the disc means is circular in cross-section around the longitudinal axis of the cyclone.		No infringement by virtue of its dependence on claim no. 1.	The Fusion has the elements of this claim. Because claim no. 1 is infringed, this claim is infringed.

Claim No. 3 of the '008 Patent		Maytag's Position	Dyson's Response
3. The apparatus of claim 1 wherein the disc means has a conical shape around the shroud means such that a larger portion of the conical shape faces towards the bottom of the container.		No infringement by virtue of its dependence on claim no. 1.	The Fusion has the elements of this claim. Because claim no. 1 is infringed, this claim is infringed.

Claim No. 7 of the '008 Patent		Maytag's Position	Dyson's Response
7. The apparatus of claim 1 wherein the disc means is positioned about one-third of the distance between the cone opening and the air inlet of the cyclone.		No infringement by virtue of its dependence on claim no. 1.	The Fusion has the elements of this claim. Because claim no. 1 is infringed, this claim is infringed

Claim No. 11 of the '008 Patent		Maytag's Position	Dyson's Response
11. The apparatus of claim 1 wherein the outer container has a substantially cylindrical sidewall.		No infringement by virtue of its dependence on claim no. 1.	The Fusion has the elements of this claim. Because claim no. 1 is infringed, this claim is infringed.

Claim No. 23 of the '008 Patent		Maytag's Position	Dyson's Response
A shroud means for use in a cleaning apparatus including an outer container comprising a bottom and a sidewall extending to and meeting the bottom, the sidewall having an interior surface, a dirty air inlet which is oriented for supplying dirt laden air into the container tangentially to the interior surface of the outer container which has a circular cross-section and an air outlet from the container; a circular cross-sectioned cyclone having a longitudinal axis mounted inside the container, the cyclone comprising a cyclone air inlet at an upper end having a first diameter of the cyclone in air communication with the air outlet of the container, an interior dirt rotational surface of frusto-conical shape for receiving an air flow from the air inlet and for maintaining its velocity to a cone opening smaller in diameter than the diameter of the upper end of the cyclone, the air inlet being oriented for supplying air tangentially to the surface, an outer surface of frusto-conical shape, and a cyclone air outlet communicating with the interior of the cyclone adjacent the upper end of the cyclone; a dirt receiving and collecting chamber extending from the cone opening; and means for generating an air flow which passes sequentially through the dirty air inlet, the container, the cyclone air inlet, the cyclone, the receiving chamber and the cyclone air outlet, the air flow rotating around the frusto-conical interior surface of the cyclone and depositing the dirt in the receiving chamber the improvement which comprises: (a) a shroud means to be mounted on and around the outer surface of the cyclone and having opposed ends along the longitudinal axis and providing for outlet air from the container into the air inlet to the cyclone wherein the shroud means is mounted at one end below the air inlet to the cyclone at one of the opposed ends of the shroud means and extends along the outer surface with the other end at a position intermediate to the cone opening and the air inlet to the cyclone, wherein the shroud means contacts the outer surface of the cyclone for closure at the other of the ends and wherein the shroud means has perforations adjacent to the position intermediate to the cone opening for the flow of air from the outer container to the		This is materially the same as claim no. 1. Thus, it is not infringed for the same reasons as claim no. 1 is not infringed.	For the same reasons that the Fusion infringes claim no. 1, it also infringes claim no. 23.

Claim No. 23 of the '008 Patent		Maytag's Position	Dyson's Response
cyclone inlet; and (b) disc means provided on the shroud means at a lower longitudinal extent of the shroud means and the air inlet of the cyclone and around the axis of the cyclone with a space between the interior surface of the container and the disc means for passage of air, wherein the disc means aids in dirt removal in the first container by preventing some of the dirt from flowing into the air inlet to the cyclone.			

Claim No. 24 of the '008 Patent		Maytag's Position	Dyson's Response
24. The shroud means of claim 23 wherein the disc means is circular in cross-section around the longitudinal axis of the cyclone.		No infringement by virtue of its dependence on claim no. 23.	The Fusion has the elements of this claim. Because claim no. 23 is infringed, this claim is infringed.

Claim No. 25 of the '008 Patent		Maytag's Position	Dyson's Response
25. The shroud means of claim 23 wherein the disc means has a conical shape around the shroud means such that a larger portion of the conical shape faces towards the bottom of the container.		No infringement by virtue of its dependence on claim no. 23.	The Fusion has the elements of this claim. Because claim no. 23 is infringed, this claim is infringed.

The '038 Patent

Claim No. 1 of the '038 Patent	Element No.	Maytag's Position	Dyson's Response
1. Vacuum cleaner apparatus for separating dirt or dust from an airflow comprising		Claim is invalid.	For purposes of this motion only, Dyson withdraws its claim of infringement of this claim.
a frustoconical cyclone	1.1		
having a tangential air inlet located at or adjacent the end of the cyclone having the larger diameter	1.2		
and a cone opening located at the end of the cyclone having a smaller diameter than at the end having the larger diameter,	1.3		
and a collector arranged so as to surround the cone opening and having a base surface facing towards the cone opening,	1.4		
wherein the distance between the cone opening and the base surface is either less than 8 mm or between 30 mm and 70 mm	1.5	*For purposes of claim nos. 13 and 14:* The distance between the cone opening and the base surface on the Hoover Fusion is 72.2 mm, "outside of the recited range of the claim." (Maytag Br. at 13)	*For purposes of claim nos. 13 and 14:* The measured distance on the Hoover Fusion is 70.82 mm, not 72.2 mm. Furthermore, Maytag concedes that the distance in the Hoover Fusion performs substantially the same function, in substantially the same way and obtains substantially the same result, thereby infringing under the doctrine of equivalents. (Dyson Reply Br. at 13-14)
such that there is improved separation of the dirt or dust because of the distance in the apparatus.	1.6		

Claim No. 13 of the '038 Patent		Maytag's Position	Dyson's Response
13. Apparatus as claimed in any one of claims 3, 4, 5, or 6 wherein the base surface has a diameter spaced around the longitudinal axis of the cyclone with an upwardly extending annular wall from the base surface wherein a diameter of the wall is greater at an end adjacent the base surface than at an end remote therefrom.		The Fusion does not have the recited annular wall. (Maytag Br. at 14)	The Hoover Fusion "has an annular wall that clearly extends upwardly from the base surface of the outer container." (Dyson Reply Br. at 14)

Claim No. 14 of the '038 Patent		Maytag's Position	Dyson's Response
14. Apparatus as claimed in any one of claims 3, 4, 5 or 6 wherein the base surface is spaced around the longitudinal axis of the cyclone with an upwardly extending annular wall from the base surface wherein the end of the wall remote from the base surface is radiused.		The Fusion does not have the recited annular wall. (Maytag Br. at 14)	The Hoover Fusion "has an annular wall that clearly extends upwardly from the base surface of the outer container." (Dyson Reply Br. at 14)